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Remarks

This application has been reviewed in light of the Office Action of August 4, 2003. Claims 1-18 are pending, and all claims stand rejected. In response, claims 19 and 20 are added; and the following remarks are submitted. Reconsideration of this application, as amended, is requested.

Claims 1-6, 8, 9, and 12-18 are rejected under 35 USC 103 over Andrieu US Patent 5,543,245 in view of Kewano US Patent 6,193,946. Applicant traverses this ground of rejection.

The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the applied prior art references clearly do not arguably teach some limitations of the claims.

Claim 1 recites in part:

"a Schottky diode connected between the anode and the cathode
of the electrochemical cell"

Claim 15 has a similar recitation.

Neither reference has any such teaching. Andrieu teaches at col. 5, line 66-col. 6, line 3,

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"Each cell 32 cooperates with a diode (not shown) protecting it against polarity reversal if the battery 30 is required to supply power during testing of a cell. This terminates the test in progress. These diodes are Schottky type diodes, for example." [emphasis added]

The diode that is said to be a Schottky diode is explicitly stated to be "not shown" in the drawings. It is therefore not possible to know how the diode is electrically connected to the cell 32. Applicant can find no other mention of the Schottky diode in Andrieu. Some diodes are shown in Figures 3 and 6 of Andrieu, but since they are shown, they are not the Schottky diodes discussed at col. 5, line 66-col. 6, line 3.

Claim 12 recites in part:

"a cell current bypass connected between the anode and the cathode, the cell current bypass conducting current between the anode and the cathode to short circuit the electrochemical cell only at voltages more negative than the negative bypass voltage"

Neither reference has any such teaching. There is no teaching of a negative bypass voltage in either reference, and particularly no teaching of a bypass to short circuit the cell only at voltages more negative than the negative bypass voltage.

Claim 15 further recites in part:

"fully discharging the battery; and thereafter
operating the battery in a series of charging and discharging cycles."

Neither reference has any such teaching in conjunction with the other limitations of the claims. This limitation is important because the primary purpose of the present approach is to deal with the problems associated with the balancing of the cells of the battery made of the recited materials and to permit "...a passive charge balancing and

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equalization of the charge in the individual cells prior to normal charging/discharging cycles, or at intermediate times amidst charging/discharging cycles". Andrieu is not concerned with this problem at all in specific types of lithium batteries, and instead is only concerned with monitoring battery aging.

Kewano deals with lithium cathode materials, but is not concerned with the balancing of cells that are electrically connected together to form a battery or with the characteristics of the modified lithium oxide cathode material that makes balancing of the cells in the battery difficult. Further, to arbitrarily plug teachings from Kewano into Andrieu is not justified and not urged by either reference. The present invention did not arbitrarily choose to use the modified lithium oxide cathode, which is recited in every claim, but instead sought to solve a particular problem associated with the use of this material in the cathode. See the discussion in the first paragraph of page 8 of the present application--the full discharge of the recited battery structure results in charge balancing prior to the subsequent charging/discharging cycles.

The present rejection seeks to perform a hindsight reconstruction based upon unrelated references, which is technically unsupported and is legally improper.

Stated in legal terms, the present rejection is a sec. 103 combination rejection. It is well established that a proper sec. 103 combination rejection requires more than just finding in the references the elements recited in the claim (but which was not done here). To reach a proper teaching of an article or process through a combination of references, there must be stated an objective motivation to combine the teachings of the references, not a hindsight rationalization in light of the disclosure of the specification being examined. MPEP 2143 and 2143.01. See also, for example, In re Fine, 5 USPQ2d 1596, 1598 (at headnote 1) (Fed.Cir. 1988), In re Laskowski, 10 USPQ2d 1397, 1398 (Fed.Cir. 1989), W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 311-313 (Fed. Cir., 1983), and Ex parte Levengood, 28 USPQ2d 1300 (Board of Appeals and Interferences, 1993); Ex parte Chicago Rawhide Manufacturing Co., 223 USPQ 351 (Board of Appeals 1984). As stated in In re Fine at 5 USPQ2d 1598:

"The PTO has the burden under section 103 to establish a prima facie

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case of obviousness. [citation omitted] It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

And, at 5 USPQ2d 1600:

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."

Following this authority, the MPEP states that the examiner must provide such an objective basis for combining the teachings of the applied prior art. In constructing such rejections, MPEP 2143.01 provides specific instructions as to what must be shown in order to extract specific teachings from the individual references:

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention when there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)."

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"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)."

* * * * *

"A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the

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art at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd.Pat.App.& Inter. 1993)."

Here, there is set forth no objective basis for combining the teachings of the references in the manner used by this rejection, and selecting the helpful portions from each reference while ignoring the unhelpful portions. An objective basis is one set forth in the art or which can be established by a declaration, not one that can be developed in light of the present disclosure. The rationale set forth in the Office Action is not supported in the art, and there is no reason to believe that the approach of Andrieu is operable with the materials set forth in Kewano. If the rejection is maintained, Applicant asks that the Examiner set forth the objective basis found in the references themselves for combining the teachings of the references.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 7 and 10 are rejected under 35 USC 103 as unpatentable over Andrieu in view of Kewano as applied to claim 1, and further in view of Okada US Patent 6,027,836. Applicant traverses this ground of rejection.

Claims 7 and 10 depend from claim 1, and incorporate its limitations. Okada adds nothing in this regard.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 1, 2, 3, 5, 6, 8, 9, and 11-17 are rejected under 35 USC 103 over Andrieu in view of Maeda. Applicant traverses this ground of rejection.

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Applicant incorporates by reference the prior discussion of Andrieu.

Maeda deals with lithium cathode materials, but is not concerned with the balancing of cells that are electrically connected together to form a battery or with the characteristics of the modified lithium oxide cathode material that makes balancing of the cells in the battery difficult. Further, to arbitrarily plug teachings from Maeda into Andrieu is not justified and not urged by either reference. The present invention did not arbitrarily choose to use the modified lithium oxide cathode, which is recited in every claim, but instead sought to solve a particular problem associated with the use of this material in the cathode. See the discussion in the first paragraph of page 8 of the present application--the full discharge of the recited battery structure results in charge balancing prior to the subsequent charging/discharging cycles.

Claim 1 recites in part:

"a Schottky diode connected between the anode and the cathode of the electrochemical cell"

Claim 15 has a similar recitation.

Neither reference has any such teaching. Andrieu teaches at col. 5, line 66-col. 6, line 3,

"Each cell 32 cooperates with a diode (not shown) protecting it against polarity reversal if the battery 30 is required to supply power during testing of a cell. This terminates the test in progress. These diodes are Schottky type diodes, for example." [emphasis added]

The diode that is said to be a Schottky diode is explicitly stated to be "not shown" in the drawings. It is therefore not possible to know how the diode is electrically connected to the cell 32. Applicant can find no other mention of the Schottky diode in Andrieu. Some diodes are shown in Figures 3 and 6 of Andrieu, but since they are shown, they are not the Schottky diodes discussed at col. 5, line 66-col.

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6, line 3.

Claim 12 recites in part:

"a cell current bypass connected between the anode and the cathode, the cell current bypass conducting current between the anode and the cathode to short circuit the electrochemical cell only at voltages more negative than the negative bypass voltage"

Neither reference has any such teaching. There is no teaching of a negative bypass voltage in either reference, and particularly no teaching of a bypass to short circuit the cell only at voltages more negative than the negative bypass voltage.

Claim 15 further recites in part:

"fully discharging the battery; and thereafter
operating the battery in a series of charging and discharging cycles."

Neither reference has any such teaching in conjunction with the other limitations of the claims. This limitation is important because the primary purpose of the present approach is to deal with the balancing of the cells of the battery and to permit "...a passive charge balancing and equalization of the charge in the individual cells prior to normal charging/discharging cycles, or at intermediate times amidst charging/discharging cycles". Andrieu is not concerned with this problem at all in lithium batteries, and instead is only concerned with monitoring battery aging.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Applicant submits that the application is now in condition for allowance, and requests such allowance.

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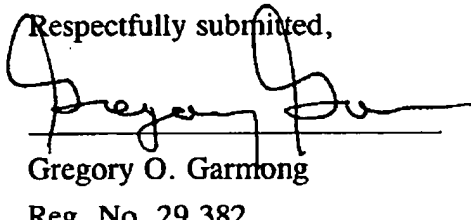
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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office at fax 703-872-9310 on September 8, 2003.

Respectfully submitted,



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